Amendments to the Claims:

Without prejudice, this listing of claims replaces all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

1-18. (Canceled).

19. (Original) A circuit for converting packets into a signal which is a transmission unit in a synchronous digital transmission standard, wherein said circuit is used in a transmission device for transmitting packets, said circuit comprising:

means for converting the packets into a plurality of data streams;

means for multiplexing the data streams without adding any overhead for upper layer transmission; and

means for generating said signal by adding at least one overhead to the multiplexed data streams.

20. (Original) The circuit as claimed in claim 19, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

21. (Original) A circuit for converting packets into an STM signal in SDH transmission, wherein said circuit is used in a transmission device for transmitting packets, said circuit comprising:

means for converting the packets into a plurality of data streams by using at least one data link layer process;

means for multiplexing the data streams by using at least one interleaving process without adding any overhead of a VC signal and for generating STM data which is a unit of said SDH transmission; and

means for generating said STM signal by adding at least one overhead which is necessary for said SDH transmission to the STM data.

22. (Original) A circuit for converting a signal which is a transmission unit in a synchronous digital transmission standard into packets, wherein said circuit is used in a

transmission device for transmitting packets, said circuit comprising:

means for separating at least one overhead from said signal;

means for generating data streams by demultiplexing data of said signal without the overhead; and

means for extracting the packets from the data streams.

23. (Original) The circuit as claimed in claim 22, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

24. (Original) A circuit for converting an STM signal in SDH transmission into packets, wherein said circuit is used in a transmission device for transmitting packets, said circuit comprising:

means for separating at least one overhead which is necessary for said SDH transmission from said STM signal;

means for generating data streams by demultiplexing data of said STM signal without the overhead; and

means for extracting the packets from the data streams by using at least one data link layer process.

25. (Original) A transmission device for transmitting packets, said transmission device comprising:

means for converting the packets into a signal which is a transmission unit in a synchronous digital transmission standard and for sending the signal by said synchronous digital transmission; and

means for converting said signal into the packets.

26. (Original) The transmission device as claimed in claim 25, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

27. (Original) A transmission device for transmitting packets by using a transmission unit in a synchronous digital transmission standard, said transmission device comprising:

a first circuit comprising means for converting the packets into a plurality of

data streams, means for multiplexing the data streams without adding any overhead for upper layer transmission, means for generating a signal which is the transmission unit by adding at least one overhead to the multiplexed data streams and means for sending the signal by said synchronous digital transmission; and

a second circuit comprising means for separating at least one overhead from said signal, means for generating data streams by demultiplexing data of said signal without the overhead and means for extracting the packets from the data streams.

28. (Original) A transmission device for transmitting packets by converting the packets into an STM signal, said transmission device comprising:

packet mapping means for mapping a plurality of packets into an entire section payload area of the STM signal; and

packet retrieving means for extracting said each packet from the section payload area.

29. (Original) The transmission device as claimed in claim 28, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

30. (Original) A transmission system for transmitting packets, said transmission system comprising:

a plurality of transmission devices each of which comprises means for converting the packets into a signal which is a transmission unit in a synchronous digital transmission standard, means for sending the signal by said synchronous digital transmission and means for converting said signal into the packets; and

means for establishing a connection between said transmission devices by using said signal.

31. (Original) The transmission system as claimed in claim 30, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

32. (Original) A transmission system for transmitting packets by using a transmission unit in a synchronous digital transmission standard, said transmission system comprising:

a plurality of transmission devices each of which comprises: a first circuit including means for converting the packets into a plurality of data streams, means for multiplexing the data streams without adding any overhead for upper layer transmission, means for generating a signal which is the transmission unit by adding at least one overhead to the multiplexed data streams and means for sending the signal by said synchronous digital transmission; and a second circuit including means for separating at least one overhead from said signal, means for generating data streams by demultiplexing data of said signal without the overhead and means for extracting the packets from the data streams; and

means for establishing a connection between said transmission devices by using said signal.

33. (Original) A transmission system for transmitting packets, said transmission system comprising:

a plurality of transmission devices each of which comprises packet mapping means for mapping a plurality of packets into an entire section payload area of an STM signal and packet retrieving means for extracting said each packet from the section payload area; and

, means for establishing a connection between said transmission devices by using said STM signal.

34. (Original) The transmission system as claimed in claim 33, wherein said packets are IP packets which are used for realizing a communication by the Internet Protocol.

35. (Original) A method for converting packets into an STM signal in SDH transmission, wherein said method is used in a transmission device for transmitting packets, said method comprising the steps of:

converting the packets into a plurality of data streams by using at least one data link layer process;

multiplexing the data streams by using at least one interleaving process without adding any overhead of a VC signal and generating STM data which is a unit of said SDH transmission; and

generating said STM signal by adding at least one overhead which is necessary

for said SDH transmission to the STM data.

36. (Original) A method for converting an STM signal in SDH transmission into packets, wherein said method is used in a transmission device for transmitting packets, said method comprising the steps of:

separating at least one overhead which is necessary for said SDH transmission from said STM signal;

generating data streams by demultiplexing data of said STM signal without the overhead; and

extracting the packets from the data streams by using at least one data link layer process.